



# The Town of Niagara-On-The-Lake

Operations  
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P.O. Box 190  
Virgil, Ontario  
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**Report:** OPS-17-012 **Committee Date:** March 06, 2017

**Due in Council:** March 20, 2017

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**Report To:** Operations Advisory Committee  
**Subject:** 2016 Summary Report for the Town's Drinking Water Systems

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## 1. RECOMMENDATION

It is respectfully recommended

- 1.1 The 2016 Summary Report for the Niagara-on-the-Lake Water Distribution System and the Bevan Heights Water Distribution System, be received for information.

## 2. PURPOSE / PROPOSAL

Ontario Regulation (O.Reg.) 170/03, Schedule 22, requires that a Water Distribution System Summary Report be delivered to members of Council annually by March 31 of the following year.

## 3. BACKGROUND

Under Schedule 22 of Ontario Regulation 170/03, pursuant to the Safe Drinking Water Act, 2002, a report referred to as the Summary Report must be provided to Council as the owner of the two distribution systems for information. The Summary Report must include information regarding the Act and associated regulations, licenses, permits, incidents of non-compliance, and a summary of quantities and flow rates of water supplied during the period covered by the report.

## 4. DISCUSSION / ANALYSIS

The Summary Report, as required by Ontario Regulation 170/03, for both the Town's residential water distribution systems is attached to this report.

Appended to the Summary Report are the Annual Reports in standard Ministry of Environment reporting format. The Annual Reports focus primarily on the weekly water samples taken from the systems which are tested for microbiological and chemical parameters.

## 5. STRATEGIC PLAN

N/A

**6. OPTIONS**

N/A

**7. FINANCIAL IMPLICATIONS**

N/A

**8. COMMUNICATIONS**

The 2016 Summary Reports are posted on the Town's website and copies will be available to the public upon request as required by O.Reg. 170/03.

**9. CONCLUSION**

As per legislation, the 2016 Summary Report for the Niagara-on-the-Lake Water Distribution System and the Bevan Heights Water Distribution System, is being provided for Council's information.

**9. CONCLUSION**

As per legislation, the 2016 Summary Report for the Niagara-on-the-Lake Water Distribution System and the Bevan Heights Water Distribution System, is being provided for Council's information.

**Prepared by,**

**Victoria Steele  
Administrative Assistant - Operations**

**Reviewed by,**

**Darrin Wills, C.Tech, rcji  
Engineering Technologist, DWQMS**

**Jeffrey Vyse, C.S.T.  
Manager of Public Works**

**Respectfully submitted,**

**Sheldon Randall**  
**Director of Operations**

**Holly Dowd**  
**Chief Administrative Officer**

ATTACHMENTS



2016 Annual Summary Report.pdf

WEB ATTACHMENTS

ATTACHMENTS FOR LINK

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First Capital of Upper Canada - 1792



# Town of Niagara-on-the-Lake's 2016 Drinking Water Summary Report

## *DWQMS Policy*

*Working to ensure legislative compliance with the Safe Drinking water Act and all applicable regulations;*

*Acting quickly to resolve any issues relating to drinking water quality;*

*Taking all steps necessary to provide safe drinking-water to Town customers;*

*Establishing open and effective communication with Town water customers;*

*Reviewing and continually improving its Drinking Water Quality Management System*



Prepared by Darrin Wills, C.Tech.  
Drinking Water QMS Representative

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## Background

The Town operates two separate water distribution systems. The Niagara-on-the-Lake Water Distribution System is classified as a Large Municipal Residential System, and the Bevan Heights Water Distribution Systems is considered a Small Municipal Residential System. The Ministry of the Environment inspects and reports on these systems annually.

The Region of Niagara, at its DeCew Falls and Niagara Falls water treatment plants, produces treated water for the Town of Niagara-on-the-Lake's Distribution Systems. The treated water is carried by a series of transmission mains to the Town. In turn, water is distributed to approximately 6200 customers in Niagara-on-the-Lake via more than 197 km of Town distribution mains. There are approximately 1322 fire hydrants and 1306 main valves on the distribution system.

The Bevan Heights Distribution System serves 72 customers. Water is received from the City of Niagara Falls' distribution system. The original water system here dates back to the 1950's. All watermains, appurtenances and service lines within the Bevan Heights subdivision were renewed in 2002. The lone exception is on Mallette Crescent, where the watermain dates from 1971 and is still adequate. Service lines on Mallette Crescent were renewed in 2002. On September 24, 2012, the Ministry of the Environment requested that the water system on Concession 6 Road (Niagara Falls boundary to Highway 405) be included with Bevan Heights for the purpose of reporting. The watermain on Concession 6 Road was constructed in 1994. There are approximately 16 fire hydrants and 19 valves on the Bevan Heights system (including Concession 6 Road).

*The Safe Drinking Water Act  
and all its associated  
regulations are available at  
[www.e-laws.gov.on.ca](http://www.e-laws.gov.on.ca)*

## Legislative Requirements

### Safe Drinking Water Act (SDWA)

In response to the Walkerton Tragedy, the Ministry of Environment has enacted legislation and regulations for drinking water in order to ensure safe drinking water. The Safe Drinking Water Act, 2002 was established to recognize that the people of Ontario are entitled to expect their drinking water to be safe and to provide protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and by requiring drinking water testing. The SDWA includes provisions that address:

- Enforcement powers for Ministry inspectors;
- Roles and responsibilities of owners and operators involved in the drinking water system;
- Requirements for the use of licensed laboratories for drinking water testing;
- Requirements for certification of all operators of the drinking water systems;
- Mandatory licensing for Municipalities, which includes Drinking Water Works Permits, Financial Plans and Accreditation for their drinking water systems;

*Excerpts of O. Reg 170/03 can be found in Appendix A*

- Establishment of a standard of care, which requires municipalities to act with honesty and competency

### **Ontario Regulation 170/03: Drinking Water Systems Regulation**

Ontario Regulation 170/03, a regulation under the Safe Drinking Water Act, 2002, is the primary regulation which outlines operational checks, sampling, testing and reporting requirements that owners and operators of drinking water systems must adhere to.

See Appendix A for excerpts that prescribe requirements relevant to our Niagara-on-the-Lake Drinking Water System (large municipal residential system) and Bevan Heights Drinking Water System (small municipal residential system).

### **Ontario Regulation 128/04: Certification of Drinking Water Operators and Water Quality Analysts**

The Certification Program establishes standards for Water Operators and Water Quality Analysts for education, experience and knowledge needed to perform their duties effectively. This regulation stipulates types of licenses required, functions that must be performed by certified operators, training requirements, recertification as well as responsibilities for Overall-Responsible-Operator (ORO) and Operator-In-Charge (OIC).

### **Ontario Regulation 435/07: Financial Plans**

Under this Regulation, the Town was required to file a Financial Plan. This Plan, which was endorsed by Council, was submitted to the Ministry of Municipal Affairs and Housing in September 2010. The financial plan was created according to regulations. It covers how the Town plans to operate, maintain and rehabilitate/reconstruct the water systems and a cost recovery plan projected for the next 25 years. It was updated in 2014.

## **Municipal Drinking Water License**

The SDWA prescribes that all municipalities in the province are to obtain a Municipal Drinking Water License for their drinking water systems. The Town has a separate license for each of our drinking water systems. These Municipal Drinking Water Licenses are valid for a period of 5 years.

The Niagara-on-the-Lake Distribution System, license number 069-102, Issue Number 2, was issued on March 17, 2015. Application for License Renewal must be submitted by September 14, 2019.

The Bevan Heights Distribution System, license number 069-101, Issue Number 2, was also issued on March 17, 2015 and application for license renewal must be submitted by September 14, 2019 as well.

## **Drinking Water Works Permit**

The Town of Niagara-on-the-Lake was issued its renewed Drinking Water Works Permit number 069-202, Issue Number 3, on March 17, 2015. This permit allows the Town to establish, replace or alter a municipal residential drinking water system.

## **Drinking Water Quality Management Standard**

The SDWA, requires municipal drinking water systems to obtain accreditation. In order to be accredited, an operating authority must establish and maintain a quality management system based on the Drinking Water Quality Management Standard (DWQMS). The Town obtained accreditation from SAI Global, a third party accreditation body, for Full Scope – Entire DWQMS on May 22, 2013, based on a successful off site audit by SAI Global of the operational plan and implementation of all DWQMS requirements. SAI Global conducted a re-accreditation audit in the spring of 2015 and issued a new Accreditation Certificate to the Town for both systems on April 15, 2015.

## **MOE Inspections & Non-Compliance with Legislation**

Schedule 22 of O. Reg. 170/03 requires that all non-compliance with applicable legislation be discussed in this Summary Report.

### **Niagara-on-the-Lake and Bevan Heights Distribution Systems**

In the MOECC's 2016 Inspection Report, received August 11, 2016 and contained two minor non-compliances. Both of these were resolved and accepted/approved by the MOECC on September 6, 2016.



## Standard of Care

Section 19 of the Safe Drinking Water Act, which came into effect on January 1, 2013, requires those who are in a position of oversight of a municipal drinking water system apply a statutory standard of care. This applies to the Owner as well as the Top Management and Operating Authority. Failure to comply with Section 19 of the SDWA is an offence which could result in significant financial penalties or imprisonment.

The Municipal Drinking Water Licensing Program assists owners and operators in meeting the statutory standard of care. Standard of Care training for the Lord Mayor, Counsellors, and top management took place on April 13, 2015. As well, additional management personnel received Standard of Care training on December 20, 2016.

## Water Usage

The following information is reported as required by Schedule 22 of O. Reg. 170/03.

### Niagara-on-the-Lake Water Distribution System 2016 Water Consumption

Month	Total Consumption (m <sup>3</sup> )	Daily Average (m <sup>3</sup> )
January	190,671	6,151
February	188,611	6,504
March	200,537	6,469
April	227,527	7,584
May	288,552	9,308
June	398,378	13,279
July	480,470	15,499
August	405,789	13,090
September	284,286	9,476
October	240,856	7,770
November	217,984	7,266
December	202,121	6,520
<b>TOTAL</b>	<b>3,325,782</b>	

**Bevan Heights Water Distribution System  
2016 Water Consumption**

Month	Total Consumption (m <sup>3</sup> )	Daily Average (m <sup>3</sup> )
January	901	29.1
February	898	31.0
March	1,165	37.6
April	1,093	36.4
May	2,409	77.7
June	3,963	132.1
July	4,419	142.5
August	3,475	112.1
September	1,649	55.0
October	4,257	137.3
November	938	31.3
December	1,169	37.7
<b>TOTAL</b>	<b>26,336</b>	

**Annual Reports**

Copies of the annual reports must be available to the public free of charge according to O.Reg. 170/03. Copies are available at the Public Works building at 3 Lorraine Street in Virgil. These reports are also accessible on the Town’s Website.

**2016 Annual Report for Niagara-on-the-Lake Drinking Water System**

<b>Drinking-Water System Number:</b>	<b>260001380</b>
<b>Drinking-Water System Name:</b>	Niagara-on-the-Lake Distribution System
<b>Drinking-Water System Owner:</b>	Town of Niagara-on-the-Lake
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1 – December 31, 2016

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><b>Location where Summary Report</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>Town of Niagara-on-the-Lake</p> <p>Public Works Department</p> <p>3 Lorraine Street</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/></p> <p>Number of Interested Authorities you report to: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/></p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
N/A - not applicable	N/A - not applicable

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes  No  NA

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method \_\_\_\_\_

**Describe your Drinking-Water System**

The Region of Niagara at its DeCew Falls and Niagara Falls water treatment plants produce water for the Town of Niagara-on-the-Lake. The Treated water is carried by a series of transmission mains and storage facilities to the Town. In turn, water is distributed to approximately 6200 customers in Niagara-on-the-Lake via more than 197 km of Town distribution mains. There are approximately 1322 fire hydrants and 1306 valves in the distribution systems.

**List all water treatment chemicals used over this reporting period**

N/A – This is a distribution system only. Information on the treatment of water supply would need to be obtained from the Region of Niagara.

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Please provide a brief description and a breakdown of monetary expenses incurred**

The cost for maintenance, operation, administration and water procurement for all of Niagara-on-the-Lake’s water distribution system, including Bevan Heights, was approximately \$4,300,000 in 2016. Capital costs for the replacement of approximately 1,200 m of watermains was approximately \$780,000 in 2016.

**Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre**

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date

**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.**

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw					
Treated					
Distribution	489	0-0	0-0	489	0-135

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity			
Chlorine	979	0.06 - 1.54	mg/l
Fluoride (If the DWS provides fluoridation)			

***NOTE:** For continuous monitors use 8760 as the number of samples.*

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				

<b>Cadmium</b>				
<b>Chromium</b>				
<b>*Lead</b>				
<b>Mercury</b>				
<b>Selenium</b>				
<b>Sodium</b>				
<b>Uranium</b>				
<b>Fluoride</b>				
<b>Nitrite</b>				
<b>Nitrate</b>				

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

**Summary of lead testing under Schedule 15.1 during this reporting period**

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

<b>Location Type</b>	<b>Number of Samples</b>	<b>Range of Lead Results (min#) - (max #)</b>	<b>Unit of Measure</b>	<b>Number of Exceedances</b>
<b>Plumbing</b>	0*	N/A	N/A	N/A
<b>Distribution</b>	0*	N/A	N/A	N/A

\* This drinking water system met the requirements of subsection 15.1-5(9) of schedule 15.1 of O. Reg. 170/03 and was not required to test for lead in plumbing for the distribution system in 2016.

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Alachlor</b>				
<b>Aldicarb</b>				
<b>Aldrin + Dieldrin</b>				

<b>Atrazine + N-dealkylated metabolites</b>				
<b>Azinphos-methyl</b>				
<b>Bendiocarb</b>				
<b>Benzene</b>				
<b>Benzo(a)pyrene</b>				
<b>Bromoxynil</b>				
<b>Carbaryl</b>				
<b>Carbofuran</b>				
<b>Carbon Tetrachloride</b>				
<b>Chlordane (Total)</b>				
<b>Chlorpyrifos</b>				
<b>Cyanazine</b>				
<b>Diazinon</b>				
<b>Dicamba</b>				
<b>1,2-Dichlorobenzene</b>				
<b>1,4-Dichlorobenzene</b>				
<b>Dichlorodiphenyltrichloroethane (DDT) + metabolites</b>				
<b>1,2-Dichloroethane</b>				
<b>1,1-Dichloroethylene (vinylidene chloride)</b>				
<b>Dichloromethane</b>				
<b>2,4-Dichlorophenol</b>				
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b>				
<b>Diclofop-methyl</b>				
<b>Dimethoate</b>				
<b>Dinoseb</b>				
<b>Diquat</b>				
<b>Diuron</b>				
<b>Glyphosate</b>				
<b>Heptachlor + Heptachlor Epoxide</b>				
<b>Lindane (Total)</b>				
<b>Malathion</b>				
<b>Methoxychlor</b>				
<b>Metolachlor</b>				
<b>Metribuzin</b>				
<b>Monochlorobenzene</b>				
<b>Paraquat</b>				
<b>Parathion</b>				
<b>Pentachlorophenol</b>				
<b>Phorate</b>				
<b>Picloram</b>				
<b>Polychlorinated Biphenyls(PCB)</b>				
<b>Prometryne</b>				

Simazine				
THM (NOTE: show latest annual average)	2016	35.6	µg/L	0
Temephos				
Terbufos				
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample

## 2016 Annual Report for the Bevan Heights Drinking Water System

<b>Drinking-Water System Number:</b>	<b>260062452</b>
<b>Drinking-Water System Name:</b>	Bevan Heights Distribution System
<b>Drinking-Water System Owner:</b>	Town of Niagara-on-the-Lake
<b>Drinking-Water System Category:</b>	Small Municipal Residential
<b>Period being reported:</b>	January 1 - December 31, 2016

<i>Complete if your Category is Large</i>	<i>Complete for all other Categories.</i>
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<p><b><u>Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p>	<p>Number of Designated Facilities served:</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ] NA [X]</p> <p>Number of Interested Authorities you report to:</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ] NA [X]</p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
N/A - not applicable	N/A - not applicable

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [ ] No [ ] NA [X]

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method \_\_\_\_\_

Describe your Drinking-Water System

The Bevan Heights Distribution System is a small municipal residential system servicing 72 customers. Water is received from the City of Niagara Falls' distribution system. The original water system here dates to the 1950's. All watermains, appurtenances and service lines within the Bevan Heights subdivision were renewed in 2002. The lone exception is on Mallette Crescent where the watermain dates to 1971 and is still adequate. Service lines on Mallette Crescent were renewed in 2002. On September 24, 2012 the Ministry of the Environment requested that the water system on Concession 6 Road (Niagara Falls boundary to Highway 405) be included with Bevan Heights for the purpose of reporting. The watermain on Concession 6 Road was constructed in 1994. There are approximately 16 fire hydrants and 19 valves in the Bevan Heights system (including Concession 6 Road).

**List all water treatment chemicals used over this reporting period**

N/A – This is a distribution system only. Information on the treatment of water supply would need to be obtained from the Region of Niagara.

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Please provide a brief description and a breakdown of monetary expenses incurred**

The cost for maintenance, operation, administration and water procurement for all of Niagara-on-the-Lake's water distribution system, including Bevan Heights, was approximately \$4,300,000 in 2016.

**Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre**

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date

**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.**

	Number	Range of E.Coli	Range of Total	Number	Range of HPC

	of Samples	Or Fecal Results (min #)-(max #)	Coliform Results (min #)-(max #)	of HPC Samples	Results (min #)-(max #)
Raw					
Treated					
Distribution	64	0-0	0-0	64	0-5

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure	<i>NOTE: For continuous monitors use 8760 as the number of samples.</i>
Turbidity				
Chlorine	183	0.23 - 1.23	mg/l	
Fluoride (If the DWS provides fluoridation)				

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				
Cadmium				

<b>Chromium</b>				
<b>*Lead</b>				
<b>Mercury</b>				
<b>Selenium</b>				
<b>Sodium</b>				
<b>Uranium</b>				
<b>Fluoride</b>				
<b>Nitrite</b>				
<b>Nitrate</b>				

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

### **Summary of lead testing under Schedule 15.1 during this reporting period**

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

<b>Location Type</b>	<b>Number of Samples</b>	<b>Range of Lead Results (min#) - (max #)</b>	<b>Unit of Measure</b>	<b>Number of Exceedances</b>
<b>Plumbing</b>	0*	N/A	N/A	N/A
<b>Distribution</b>	0*	N/A	N/A	N/A

\* This drinking water system met the requirements of subsection 15.1-5(9) of schedule 15.1 of O. Reg. 170/03 and was not required to test for lead in plumbing for the distribution system in 2016.

### **Summary of Organic parameters sampled during this reporting period or the most recent sample results**

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Alachlor</b>				
<b>Aldicarb</b>				
<b>Aldrin + Dieldrin</b>				
<b>Atrazine + N-dealkylated metabolites</b>				
<b>Azinphos-methyl</b>				

<b>Bendiocarb</b>				
<b>Benzene</b>				
<b>Benzo(a)pyrene</b>				
<b>Bromoxynil</b>				
<b>Carbaryl</b>				
<b>Carbofuran</b>				
<b>Carbon Tetrachloride</b>				
<b>Chlordane (Total)</b>				
<b>Chlorpyrifos</b>				
<b>Cyanazine</b>				
<b>Diazinon</b>				
<b>Dicamba</b>				
<b>1,2-Dichlorobenzene</b>				
<b>1,4-Dichlorobenzene</b>				
<b>Dichlorodiphenyltrichloroethane (DDT) + metabolites</b>				
<b>1,2-Dichloroethane</b>				
<b>1,1-Dichloroethylene (vinylidene chloride)</b>				
<b>Dichloromethane</b>				
<b>2-4 Dichlorophenol</b>				
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b>				
<b>Diclofop-methyl</b>				
<b>Dimethoate</b>				
<b>Dinoseb</b>				
<b>Diquat</b>				
<b>Diuron</b>				
<b>Glyphosate</b>				
<b>Heptachlor + Heptachlor Epoxide</b>				
<b>Lindane (Total)</b>				
<b>Malathion</b>				
<b>Methoxychlor</b>				
<b>Metolachlor</b>				
<b>Metribuzin</b>				
<b>Monochlorobenzene</b>				
<b>Paraquat</b>				
<b>Parathion</b>				
<b>Pentachlorophenol</b>				
<b>Phorate</b>				
<b>Picloram</b>				
<b>Polychlorinated Biphenyls(PCB)</b>				
<b>Prometryne</b>				
<b>Simazine</b>				
<b>THM (NOTE: show latest annual average)</b>	2016	32.1	µg/L	0

Temephos				
Terbufos				
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample

## Appendix A – Excerpts extracted from the Safe Drinking Water Act, 2002 Ontario. Regulation 170/03

**11. (1)** The owner of a drinking water system shall ensure that an annual report is prepared in accordance with this section. O. Reg. 170/03, s. 11 (1); O. Reg. 247/06, s. 10 (1).

**(3)** In the case of the following drinking water systems, the annual report must cover the period from January 1 to December 31 in a year and must be prepared not later than February 28 of the following year:

1. Large municipal residential systems.
2. Small municipal residential systems.

**(6)** The annual report must,

- (a) contain a brief description of the drinking water system, including a list of water treatment chemicals used by the system during the period covered by the report;
- (b) summarize any reports made to the Ministry under subsection 18 (1) of the Act or section 16-4 of Schedule 16 during the period covered by the report;
- (c) summarize the results of tests required under this Regulation, or under an approval, municipal drinking water licence or order, including an OWRA order, during the period covered by the report and,

if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter;

- (d) describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report;
- (e) describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment; and
- (f) in the case of a large municipal residential system or a small municipal residential system, include a statement of where a report prepared under Schedule 22 will be available for inspection under subsection 12 (4). O. Reg. 170/03, s. 11 (6); O. Reg. 418/09, s. 8.

(7) The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy. O. Reg. 269/03, s. 6 (2).

(8) If a drinking water system is connected to and receives all of its drinking water from another drinking water system, the owner of the system that obtains the water shall ensure that a copy of an annual report for the system from which the water is obtained is given, without charge, to every person who requests a copy. O. Reg. 269/03, s. 6 (2).

(9) Subsections (7) and (8) do not apply to an annual report that is more than two years old. O. Reg. 269/03, s. 6 (2).

(9.1) Every time that an annual report is prepared for a drinking water system, the owner of the system shall ensure that effective steps are taken to advise users of water from the system that copies of the report are available, without charge, and of how a copy may be obtained. O. Reg. 269/03, s. 6 (2).

(10) If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet. O. Reg. 170/03, s. 11 (10).

### **Information to be available**

12. (1) The owner of a drinking water system shall ensure that the following information is available for inspection in accordance with subsection (4):

1. A copy of every test result obtained in respect of a test required under this Regulation, or where continuous monitoring equipment is used under section 6-5 of Schedule 6, the daily minimum, maximum, and mean results obtained in respect of a test required under this Regulation, or under an approval, municipal drinking water licence or order, including an OWRA order.
2. A copy of every approval, drinking water works permit, municipal drinking water licence and order, including OWRA orders, that applies to the system and is still in effect, if the approval, permit, licence or order was issued after January 1, 2001.
3. A copy of every annual report prepared under section 11.
4. A copy of every report prepared under Schedule 21 or 22.
5. A copy of this Regulation. O. Reg. 170/03, s. 12 (1); O. Reg. 247/06, s. 11; O. Reg. 418/09, s. 9.

(2) Paragraphs 1 and 2 of subsection (1) do not apply to a record, report or test result until the day after it comes into the owner's possession. O. Reg. 170/03, s. 12 (2).

(3) Paragraphs 1 to 4 of subsection (1) do not apply to a record, report or test result that is more than two years old. O. Reg. 170/03, s. 12 (3); O. Reg. 253/05, s. 9 (1).

(4) The information must be available for inspection by any member of the public during normal business hours without charge,

- (a) at the office of the owner or, if the office of the owner is not reasonably convenient to users of water from the system, at a location that is reasonably convenient to those users; and
- (b) if the owner is not a municipality but the system serves a municipality, at the office of the municipality. O. Reg. 170/03, s. 12 (4).

### **Retention of records**

**13. (1)** The owner of a drinking water system shall ensure that the following documents and other records are kept for at least two years:

1. Every record or report related to a test required under any of the following provisions:
  - i. Section 7.
  - ii. Schedules 6 to 12.
  - iii. Sections 17-5 to 17-9 of Schedule 17.
  - iv. Sections 18-5 to 18-9 of Schedule 18.
2. Every record or report related to a test required under an approval, municipal drinking water licence or order, including an OWRA approval or OWRA order, unless the record or report relates to a parameter listed in Schedule 23 or 24 to this Regulation or Schedule 3 to Ontario Regulation 169/03 (Ontario Drinking Water Quality Standards).
3. Every record made under subsection 8-2 (5) of Schedule 8 or subsection 9-2 (5) of Schedule 9.
4. Every record made under subsection 3-1.1 (6) or (7) of Schedule 3. O. Reg. 247/06, s. 12; O. Reg. 418/09, s. 10 (1).

**(2)** The owner of a drinking water system shall ensure that the following documents and other records are kept for at least six years:

1. Every record or report related to a test required under any of the following provisions:
  - i. Subsection 13-2 (2), subsection 13-4 (2) and sections 13-5, 13-6 and 13-7 of Schedule 13.
  - ii. Section 15-4 of Schedule 15.
    - ii.1 Any provision in Schedule 15.1.
    - ii.2 Section 15.2-2 of Schedule 15.2.
  - iii. Sections 17-10 to 17-12 of Schedule 17.
2. Every record or report related to a test required under an approval, municipal drinking water licence or order, including an OWRA approval or OWRA order, if the record or report relates to a parameter listed in Schedule 23 or 24 to this Regulation or Schedule 3 to Ontario Regulation 169/03 (Ontario Drinking Water Quality Standards).
3. Every annual report prepared under section 11.
4. Every report prepared under Schedule 22. O. Reg. 247/06, s. 12; O. Reg. 399/07, s. 4 (1, 2); O. Reg. 418/09, s. 10 (2, 3).

**(3)** The owner of a drinking water system shall ensure that the following documents and other records are kept for at least 15 years:

1. Every record or report related to a test required under any of the following provisions:
  - i. Subsections 13-2 (3) and 13-4 (3) and sections 13-8 and 13-9 of Schedule 13.
  - ii. Sections 15-2, 15-5 and 15-6 of Schedule 15.
  - iii. Section 17-13 of Schedule 17.
  - iv. Sections 18-10 to 18-13 of Schedule 18.
2. Every report prepared under Schedule 21.
3. Every report referred to in paragraph 7 of subsection 2 (2) or clause 2 (3) (a) that is related to the system's raw water supply.
4. If the owner gave the Director a written statement by a licensed engineering practitioner under subsection 21-2 (3) of Schedule 21, a copy of the OWRA approval referred to in that subsection. O. Reg. 247/06, s. 12; O. Reg. 399/07, s. 4 (3); O. Reg. 418/09, s. 1 (5).

**(4)** The owner of a drinking water system shall ensure that reports prepared under Schedule 21 are kept at a location where they can conveniently be viewed by a provincial officer who is inspecting the system's water treatment equipment. O. Reg. 247/06, s. 12.



(5) If the Director or a provincial officer makes a request for a document or other record referred to in subsection (1), (2) or (3), the owner of a drinking water system shall ensure that the document or other record is given to the Director or provincial officer within such period as the Director or provincial officer may specify. O. Reg. 247/06, s. 12.

(6) If a licensed engineering practitioner or professional hydrogeologist is preparing an opinion, report or assessment referred to in this Regulation in respect of a drinking water system and makes a request for a document or other record referred to in subsection (1), (2) or (3), the owner of the system shall ensure that the document or other record is given to the licensed engineering practitioner or professional hydrogeologist within such period as the licensed engineering practitioner or professional hydrogeologist may specify. O. Reg. 247/06, s. 12; O. Reg. 418/09, s. 1 (5).

(7) For the purpose of this section,

- (a) a reference in subsection (1), (2) or (3) to tests required under a provision of this Regulation shall be deemed to include a reference to,
  - (i) tests required for the same parameter under section 7 of Ontario Regulation 459/00 (Drinking Water Protection — Larger Water Works), if that regulation applied to the drinking water system, or
  - (ii) tests required for the same parameter under section 9 of Ontario Regulation 505/01 (Drinking Water Protection — Small Water Works Serving Designated Facilities), if that regulation applied to the drinking water system;
- (b) a reference in paragraph 3 of subsection (2) to annual reports prepared under section 11 shall be deemed to include a reference to,
  - (i) reports prepared under section 12 of Ontario Regulation 459/00, if that regulation applied to the drinking water system, or
  - (ii) reports prepared under section 15 of Ontario Regulation 505/01, if that regulation applied to the drinking water system; and
- (c) a reference in paragraph 2 of subsection (3) to reports prepared under Schedule 21 shall be deemed to include a reference to reports prepared under section 5 of Ontario Regulation 505/01, if that regulation applied to the drinking water system. O. Reg. 247/06, s. 12.

SCHEDULE 7  
OPERATIONAL CHECKS

Municipal: Large Residential  
Small Residential

**Application**

**7-1.** This Schedule applies to the following drinking water systems.

1. Large municipal residential systems.
2. Small municipal residential systems.

**Chlorine residual**

(3) The owner of a large municipal residential system that provides secondary disinfection and the operating authority for the system shall ensure that at least seven distribution samples are taken each week in accordance with subsection (4) and are tested immediately for,

- (a) free chlorine residual, if the system provides chlorination and does not provide chloramination; or

(4) The following rules apply to the distribution samples referred to in subsection (3) unless at least one sample is taken on each day of the week:

1. At least four of the samples must be taken on one day of the week, at least 48 hours after the last sample was taken in the previous week.
2. At least three of the samples must be taken on a second day of the week, at least 48 hours after the last sample was taken on the day referred to in paragraph 1.
3. When more than one sample is taken on the same day of the week under paragraph 1 or 2, each sample must be taken from a different location.

(5) The owner of a small municipal residential system that provides secondary disinfection and the operating authority for the system shall ensure that at least two distribution samples are taken each week in accordance with subsection (6) and are tested immediately for,

- (a) free chlorine residual, if the system provides chlorination and does not provide chloramination;

(6) At least one of the distribution samples referred to in subsection (5) must be taken at least 48 hours after, and during the same week as, one of the other distribution samples referred to in subsection (5).

**Testing by certified operators or water quality analysts**

**7-5. (1)** The owner of a drinking water system and the operating authority for the system shall ensure that every test required by this Schedule is conducted by a certified operator or a water quality analyst.

(1.1) Despite subsection (1), a test required by section 7-2 or 7-3 at a small municipal residential system may be conducted by a person who is not a certified operator or water quality analyst if the person,

- (a) has been trained by a certified operator to conduct the test;
- (b) works under the supervision of a certified operator; and
- (c) immediately advises a certified operator of all test results.

SCHEDULE 10  
MICROBIOLOGICAL SAMPLING AND TESTING

Large Municipal Residential

**Application**

**10-1.** This Schedule applies to large municipal residential systems.

**Distribution samples**

**10-2.** (1) The owner of a drinking water system and the operating authority for the system shall ensure that,

(a) if the system serves 100,000 people or less, at least eight distribution samples, plus one additional distribution sample for every 1,000 people served by the system, are taken every month, with at least one of the samples being taken in each week; and

(b) if the system serves more than 100,000 people, at least 100 distribution samples, plus one additional distribution sample for every 10,000 people served by the system, are taken every month, with at least three of the samples being taken in each week.

(2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for,

(a) *Escherichia coli*; and

(b) total coliforms.

(3) The owner of the drinking water system and the operating authority for the system shall ensure that at least 25 per cent of the samples required to be taken under subsection (1) are tested for general bacteria population expressed as colony counts on a heterotrophic plate count.

#### SCHEDULE 11

#### MICROBIOLOGICAL SAMPLING AND TESTING

##### Municipal: Small Residential

#### **Application**

**11-1.** This Schedule applies to the following drinking water systems:

1. Small municipal residential systems.

#### Distribution samples

**11-2.** (1) The owner of a drinking water system and the operating authority for the system shall ensure that,

(a) at least one distribution sample is taken every two weeks, if the system provides treatment equipment in accordance with Schedule 1 or 2 and the equipment is operated in accordance with that Schedule; or

(b) at least one distribution sample is taken every week, if clause (a) does not apply.

(2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for,

(a) *Escherichia coli*;

(b) total coliforms; and

(c) if section 1-5 of Schedule 1 or subsection 2-5 (1) of Schedule 2 applies to the system, general bacteria population expressed as colony counts on a heterotrophic plate count.

#### SCHEDULE 13

#### CHEMICAL SAMPLING AND TESTING

##### Municipal: Large Residential Small Residential

#### **Application**

**13-1.** This Schedule applies to the following drinking water systems:

1. Large municipal residential systems.
2. Small municipal residential systems.

#### **Trihalomethanes**

**13-6.** (1) The owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken every three months, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of trihalomethanes.

(2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for trihalomethanes.

#### SCHEDULE 15.1

##### LEAD

Municipal: Large Residential  
Small Residential

##### **Application**

**15.1-1.** This Schedule applies to the following drinking water systems:

1. Large municipal residential systems.
2. Small municipal residential systems.

##### **Limited meaning of "serve"**

**15.1-2.** For the purposes of this Schedule,

- (a) a drinking water system serves a population if its distribution system is directly connected to the plumbing that serves the population;
- (b) a drinking water system serves a private residence or other building if its distribution system is directly connected to the plumbing that serves the private residence or other building.

##### **Definitions**

**15.1-3.** In this Schedule,

"lead plumbing" and "lead service pipes" mean plumbing and service pipes with a lead content greater than 8 per cent; ("installation de plomberie en plomb", "conduites de branchement en plomb")

"lead solder" means solder with a lead content greater than 0.2 per cent; ("soudures de plomb")

"Schedule 2 standard" means a standard prescribed for any substance in Schedule 2 to the Ontario Drinking Water Quality Standards; ("norme prescrite à l'annexe 2")

"standard prescribed for lead" means the standard prescribed for lead in Schedule 2 to the Ontario Drinking Water Quality Standards; ("norme prescrite à l'égard du plomb")

##### **Standard sampling**

**15.1-4.** (1) The owner of a drinking water system and the operating authority for the system shall ensure that, in accordance with sections 15.1-6 and 15.1-7, samples are taken during the periods described in subsection (2),

- (a) in plumbing that serves private residences, from at least the number of points set out in Column 3 of the Table to this section opposite the population served by the drinking water system;
  - (b) in plumbing that does not serve private residences, from at least the number of points set out in Column 4 of the Table to this section opposite the population served by the drinking water system; and
  - (c) in the drinking water system's distribution system, from at least the number of points set out in Column 5 of the Table to this section opposite the population served by the drinking water system.
- (2) The samples required by subsection (1) must be taken during each of the following periods:
1. The period from December 15, 2007 to April 15, 2008 and the corresponding period in every subsequent 12-month period.
  2. The period from June 15, 2008 to October 15, 2008 and the corresponding period in every subsequent 12-month period.

(3) Despite subsection (1), if the population served by a drinking water system is less than 100 and if the number of buildings served by the system is less than five, the sampling requirements set out in subsection (1) do not apply and instead, one sample per building must be taken from plumbing that serves a private residence within the building, during the periods described in subsection (2) and in accordance with subsection 15.1-6 (1), paragraphs 1 and 2 of subsection 15.1-6 (2) and subsections 15.1-7 (1), (3) and (4).

TABLE  
STANDARD SAMPLING — NUMBER OF SAMPLING LOCATIONS

Column 1	Column 2	Column 3	Column 4	Column 5
Item	Population Served by Drinking Water System	Number of Sampling Points in Plumbing that Serves Private Residences	Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Number of Sampling Points in Distribution System
1.	1- 99	5	1	1
2.	100 - 499	10	1	2
3.	500 - 3,299	20	2	4
4.	3,300 - 9,999	40	4	8
5.	10,000 - 49,999	60	6	12
6.	50,000 - 99,999	80	8	16
7.	100,000 or more	100	10	20

**Reduced sampling**

**15.1-5.** (1) Section 15.1-4 ceases to apply to a drinking water system, and this section applies instead, if,

- (a) in the case of a system that serves a population of less than 50,000,
  - (i) in each of two consecutive periods described in subsection 15.1-4 (2),
    - (A) not more than 10 per cent of all the samples taken from plumbing under section 15.1-4 and tested for lead exceeded half the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7, and
    - (B) no sample taken from plumbing under section 15.1-4 and tested for lead exceeded the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7, or
  - (ii) in each of four consecutive periods described in subsection 15.1-4 (2), not more than 10 per cent of all the samples taken from plumbing under section 15.1-4 and tested for lead exceeded the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7;
- (b) in the case of a system that serves a population of 50,000 or more, in each of four consecutive periods described in subsection 15.1-4 (2), not more than 10 per cent of all the samples taken from plumbing under section 15.1-4 and tested for lead exceeded the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7.

(2) For the purpose of subsection (1), if two samples that are taken on the same day from a point in plumbing are tested for lead under section 15.1-7, the sample with the lower concentration of lead shall not be considered.

(3) If a drinking water system serves a population of less than 50,000 and, under subsection (1), section 15.1-4 does not apply to the system, the owner of the drinking water system and the operating authority for the system shall ensure that, in accordance with sections 15.1-6 and 15.1-7, samples are taken during the periods described in subsection (5) in every third 12-month period after samples were last taken under section 15.1-4 or this section,

- (a) in plumbing that serves private residences, from at least the number of points set out in Column 3 of the Table to this section opposite the population served by the drinking water system;
- (b) in plumbing that does not serve private residences, from at least the number of points set out in Column 4 of the Table to this section opposite the population served by the drinking water system; and
- (c) in the drinking water system's distribution system, from at least the number of points set out in Column 5 of the Table to this section opposite the population served by the drinking water system.

(4) If a drinking water system serves a population of 50,000 or more and, under subsection (1), section 15.1-4 does not apply to the system, the owner of the drinking water system and the operating authority for

the system shall ensure that, in accordance with sections 15.1-6 and 15.1-7, samples are taken during the periods described in subsection (5), in every 12-month period after samples were last taken under section 15.1-4 or this section,

- (a) in plumbing that serves private residences, from at least the number of points set out in Column 3 of the Table to this section opposite the population served by the drinking water system;
- (b) in plumbing that does not serve private residences, from at least the number of points set out in Column 4 of the Table to this section opposite the population served by the drinking water system; and
- (c) in the drinking water system's distribution system, from at least the number of points set out in Column 5 of the Table to this section opposite the population served by the drinking water system.

(5) The samples required by subsections (3) and (4) must be taken during each of the following periods in the relevant 12-month period:

1. The period from December 15 to April 15.
2. The period from June 15 to October 15.

(6) This section ceases to apply to a drinking water system, and section 15.1-4 applies again, if in any period described in subsection (5), more than 10 per cent of all the samples taken from plumbing under that subsection and tested for lead exceeded the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7.

(7) For the purpose of subsection (6), if two samples that are taken on the same day from a point in plumbing are tested for lead under section 15.1-7, the sample with the lower concentration of lead shall not be considered.

(8) Despite subsection (3), if the population served by the drinking water system is less than 100 and if the number of buildings served by the system is less than five, the sampling requirements set out in subsection (3) do not apply and instead, one sample per building must be taken from plumbing that serves a private residence within the building, during the periods described in subsection (2) and in accordance with subsection 15.1-6 (1), paragraphs 1 and 2 of subsection 15.1-6 (2) and subsections 15.1-7 (1), (3) and (4).

(9) The requirements for taking samples set out in clauses (3) (a) and (b) and subsection (8) cease to apply to a drinking water system if, in each of two consecutive periods described in subsection (5) not more than 10 per cent of all the samples from plumbing taken under clause (3) (a) or (b) or subsection (8), or taken in accordance with a condition imposed under subsection 38 (2), 46 (2) or 60 (2) of the Act with respect to a system that serves a population of less than 50,000, that were tested for lead exceed the standard prescribed for lead, according to the results of the tests conducted under clause 15.1-7 (3) (a) or under a condition imposed under subsection 38 (2), 46 (2) or 60 (2) of the Act.

(10) When the requirements for taking samples set out in clauses (3) (a) and (b) and subsection (8) cease to apply under subsection (9) to a drinking water system, the owner of the drinking water system and the operating authority for the system shall ensure that samples are taken as described in clause (3) (c), in accordance with subsection 15.1-7 (2),

- (a) to test for total alkalinity and for pH during each of the periods described in subsection (5) in every 12-month period; and
- (b) to test for lead during each of the periods described in subsection (5) in every third 12-month period.

(11) The requirements for taking samples set out in clauses (3) (a) and (b) and subsection (8) apply to a drinking water system again if the Director provides a written direction to the owner or operating authority of the system that the requirements apply to the system.

(12) The Director shall not provide a written direction under subsection (11) unless the Director has knowledge of water chemistry changes in the water of the drinking water system and in the Director's opinion the changes may increase levels of lead in the drinking water supplied by plumbing that is connected to the drinking water system.

TABLE  
REDUCED SAMPLING — NUMBER OF SAMPLING LOCATIONS

Column 1	Column 2	Column 3	Column 4	Column 5
Item	Population Served by Drinking Water System	Number of Sampling Points in Plumbing that Serves Private Residences	Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Number of Sampling Points in Distribution System
1.	1- 99	3	0	1
2.	100 - 499	5	1	1
3.	500 - 3,299	10	1	2
4.	3,300 - 9,999	20	2	3
5.	10,000 - 49,999	30	3	4
6.	50,000 - 99,999	40	4	8
7.	100,000 or more	50	5	10

**Selection of sampling points**

**15.1-6.** (1) The owner of a drinking water system and the operating authority for the system shall ensure that a sample taken from plumbing under section 15.1-4 or 15.1-5 is taken only with the consent of the occupant of the premises served by the plumbing.

(2) In selecting points in plumbing from which samples are to be taken under section 15.1-4 or 15.1-5, the owner of the drinking water system and the operating authority for the system shall ensure that the samples comply with the following rules:

1. Subject to paragraph 2, samples must be taken from,
  - i. plumbing that is connected or is suspected of being connected to lead service pipes, or
  - ii. lead plumbing or plumbing that is suspected of being lead plumbing.
2. To the extent that it is not reasonably possible to take samples from plumbing described in paragraph 1, samples may be taken from,
  - i. plumbing that is connected or is suspected of being connected to service pipes that are not lead service pipes but have lead solder, or
  - ii. plumbing that is not lead plumbing but has or is suspected of having lead solder.
3. Samples must not be taken from more than one point in the same building, unless the number of buildings served by the drinking water system is less than the number of sampling points set out in Column 3 of the Table to section 15.1-4 opposite the population served by the drinking water system.
4. Subject to paragraphs 1 to 3, samples must be taken from plumbing that serves different kinds of premises, including,
  - i. single-family homes and multi-unit residential buildings, in the case of samples taken under clause 15.1-4 (1) (a) or 15.1-5 (3) (a) or (4) (a), and
  - ii. commercial properties, industrial properties, designated facilities and public facilities, in the case of samples taken under clause 15.1-4 (1) (b) or 15.1-5 (3) (b) or (4) (b).
5. Subject to paragraphs 1 to 3, samples must be taken from different geographical areas that are served by the drinking water system.

(3) The owner of a drinking water system and the operating authority for the system shall ensure that each sample taken from the system's distribution system under section 15.1-4 or 15.1-5 is taken,

- (a) on the same day that samples are taken from points in plumbing under that section; and
- (b) from a point in the distribution system that is as close as reasonably possible to the points in plumbing from which samples are taken.

**Sampling protocol and testing**

**15.1-7.** (1) The owner of a drinking water system and the operating authority for the system shall ensure that samples taken from a point in plumbing under section 15.1-4 or 15.1-5 are taken in accordance with the following rules:

1. Two one-litre samples and the sample described in paragraph 12 must be taken.
2. All three samples must be taken from the same tap.
- 2.1 The samples must be of cold water.
3. If the tap from which samples are to be taken has an aerator, the aerator must not be removed while the samples are being taken.
4. The samples must be taken from,
  - i. a kitchen tap, if the sample is being taken from plumbing that serves premises that have a kitchen tap, or
  - ii. the tap that is most commonly used to provide water for human consumption, in any other case.
5. If a filter or other water-treating device is installed on or near the tap specified in paragraph 4, the filter or other device must be bypassed without being removed, if it is reasonably possible to do so, while the samples are being taken.
6. If a filter or other water-treating device is installed on or near the tap specified in paragraph 4 and it is not reasonably possible to bypass the filter or other device without removing it, the samples must be taken from another tap that is commonly used to provide water for human consumption.
7. If a filter or other water-treating device is installed on or near every tap that provides water for human consumption and, in every case, it is not reasonably possible to bypass the filter or other device without removing it, the samples must be taken from the tap specified in paragraph 4, but the filter or other device must be removed before the step described in paragraph 8 is taken.
8. Before the first sample is taken in accordance with paragraph 9, the tap must be turned on for at least five minutes and then turned off for the period described in subparagraph 9 i.
9. The first sample to be taken must be taken in accordance with the following rules:
  - i. The sample must be taken immediately after a period of not less than 30 minutes but not more than 35 minutes during which the plumbing is not used and must include the first water that comes out when the tap is turned on to take the sample.
  - ii. The sample must be taken with water flowing at a rate that approximates normal use, without permitting water to splash out of the container in which the sample is being collected.
10. The second sample to be taken must be taken immediately after the first sample, without turning off the tap or altering the flow rate of the tap.
11. Unless the laboratory directions referred to in section 6-8 of Schedule 6 provide otherwise, two or more containers may be used to take the first sample and to take the second sample, but in that case the time taken to switch from one container to the next must be kept to a minimum.
12. The third sample to be taken must be taken immediately after the second sample, without turning off the tap or altering the flow rate of the tap.

(2) The owner of a drinking water system and the operating authority for the system shall ensure that samples taken from a point in the system's distribution system under section 15.1-4 or 15.1-5 are taken in accordance with the following rules:

1. Before the samples are taken, the point in the distribution system must be flushed until the quality of the water at the point is representative of the quality of the water in that part of the distribution system.
2. Three samples must be taken.
3. If a sample cannot be taken from a point in the system's distribution system, a sample of cold water may be taken instead from a point in plumbing connected to the distribution system, provided that before the sample is taken the point is flushed until the quality of the water at the point is representative of the quality of water in the part of the distribution system that is connected to the plumbing.



4. Samples must not be taken from points in the distribution system where lead levels are likely to be elevated due to materials used in fixtures or appurtenances located at or near the sampling point.
- (3) The owner of the drinking water system and the operating authority for the system shall ensure that,
  - (a) the samples taken under paragraphs 9 and 10 of subsection (1) and the first sample taken under subsection (2) are tested for lead;
  - (b) the second sample taken under subsection (2) is tested for total alkalinity; and
  - (c) the sample taken under paragraph 12 of subsection (1) and the third sample taken under subsection (2) are each tested for pH,
    - (i) immediately after the sample is taken, and
    - (ii) using a pH meter that measures pH to at least two significant digits.
- (4) The owner of the drinking water system and the operating authority for the system shall ensure that samples are taken and pH tests are conducted under this section only by,
  - (a) a certified operator;
  - (b) a water quality analyst;
  - (c) a medical officer of health or public health inspector within the meaning of the *Health Protection and Promotion Act*;
  - (d) a trained person; or
  - (e) a person who,
    - (i) has been trained by a certified operator to take samples and conduct pH tests in accordance with this section,
    - (ii) works under the supervision of a certified operator, and
    - (iii) advises a certified operator of all pH test results within a reasonable period of time.

**Drinking water tests**

**15.1-8.** Every test of a sample taken from plumbing under section 15.1-4 or 15.1-5 is prescribed as a drinking water test for the purpose of the definition of “drinking water test” in section 2 of the Act.

**Reporting requirements for samples taken from plumbing**

**15.1-9.** (1) If the operating authority for a drinking water system or the owner of a drinking water system receives a report of a test result for a test conducted on any sample referred to in subsection (2.1), the operating authority or owner shall, within seven days after receiving the report, give the following to the occupant of the premises served by the tap from which the sample was taken and, if the sample was taken from a private residence within a multi-unit residential building, the owner of the building or their agent:

1. A copy of the report.
2. A statement of whether the report indicates a result that exceeds any Schedule 2 standard.
3. If the report indicates a result described in paragraph 2, any advice given by the medical officer of health to the operating authority or owner with respect to any steps that the occupant should take.
4. The telephone number of a person who is available to answer questions about the report.

(2) If a laboratory conducts a test of a sample referred to in subsection (2.1) and a result of the test exceeds any Schedule 2 standard, the laboratory shall, within 24 hours after the result is authorized pursuant to subsection 12 (1) or paragraph 4 of subsection 12.0.1 (3) of Ontario Regulation 248/03 (Drinking Water Testing Services) made under the Act, give a written report to,

- (a) the operating authority for the drinking water system, if an operating authority is responsible for the system;
- (b) the owner of the drinking water system, if no operating authority is responsible for the system;
- (c) the medical officer of health; and
- (d) the Ministry’s Spills Action Centre.

(2.1) The requirements set out in subsections (1) and (2) apply in respect of any sample taken from plumbing under subsection 15.1-4 (1) or (3) or subsection 15.1-5 (3), (4) or (8), in accordance with sections 15.1-6 and 15.1-7, whether or not the sample is taken in a period specified in subsection 15.1-4 (2) or 15.1-5 (5).

(3) The report required by subsection (2) shall specify,

- (a) the result that requires the report; and
- (b) the particular Schedule 2 standard that the result exceeds.

(4) If a laboratory reports a test result to the operating authority for a drinking water system under subsection (2), the operating authority shall, within 24 hours after receiving the report, give a copy of the report to the owner of the system.

(5) If a laboratory reports a test result to the operating authority for a drinking water system or the owner of a drinking water system under subsection (2), the operating authority or owner shall, within 24 hours after receiving the report, give a copy of the report to the medical officer of health.

(6) If a copy of a report is given to the operator of a designated facility under subsection (1), the operator shall provide a copy of the report to the interested authority for the facility, as soon as reasonably possible and preferably within 24 hours after the operator receives the copy.

(6.1) If, during a period described in subsection 15.1-4 (2) or subsection 15.1-5 (5), any sample is taken from plumbing under subsection 15.1-4 (1) or (3) or subsection 15.1-5 (3), (4) or (8), in accordance with sections 15.1-6 and 15.1-7, the owner of a drinking water system and the operating authority for the system shall submit a report to the Director within 30 days after the end of the period specifying the number of points sampled during the period, the number of samples taken, and the number of points where a sample exceeded the prescribed standard for lead.

(7) A written document that is given under subsection (2), (4), (5), (6) or (6.1) may be delivered personally or sent by fax or by electronic mail.

(8) Despite subsection (7), the Ministry's Spills Action Centre may require that a report that is given to the Centre under subsection (2) be given in an electronic format specified by the Director.

(9) Section 18 of the Act and Schedule 16 to this Regulation do not apply to a test of a sample taken from plumbing under section 15.1-4 or 15.1-5.

#### **Corrective action for adverse results**

**15.1-10.** If a report is made under subsection 15.1-9 (2), the owner of the drinking water system and the operating authority for the system shall take such steps as are directed by the medical officer of health, including, if directed by the medical officer of health, providing information to occupants of the premises served by the plumbing from which the sample was taken that is in addition to the information provided under paragraph 3 of subsection 15.1-9 (1).

#### **Corrosion control**

**15.1-11.** (1) This section applies to a large municipal residential system if,

- (a) in two of the three most recent periods described in section 15.1-4 or 15.1-5, more than 10 per cent of all the samples taken from plumbing under that section and tested for lead exceed the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7; and
- (b) in each of the two periods mentioned in clause (a), the number of samples that exceed the standard prescribed for lead is at least two.

(2) For the purpose of subsection (1), if two samples that are taken on the same day from a point in plumbing are tested for lead under section 15.1-7, the sample with the lower concentration of lead shall not be considered.

(3) Within one year after the last day of the period mentioned in subsection (1) during which the test results are such as to cause this section to apply, the owner of the system and the operating authority for the system shall ensure that a plan that complies with subsection (5) is prepared and submitted to a Director appointed by the Minister under section 6 of the Act in respect of section 32 of the Act.

(4) The plan shall be prepared and submitted in a form and manner approved by the Director.

(5) The plan shall,

- (a) analyze the potential for lead leaching into water as a result of corrosion that occurs in the system's distribution system or in plumbing that is connected to the system's distribution system;
  - (b) list and analyze possible measures to reduce the potential for lead leaching;
  - (c) identify the preferred measure or measures;
  - (d) set out an implementation schedule; and
  - (e) include a program for monitoring the effectiveness of the preferred measure or measures.
- (6) If subsection (3) applies to a drinking water system that obtains treated water from another drinking water system,
- (a) subsection (3) also applies to the owner of the other system and to the operating authority for the other system;
  - (b) the plan mentioned in subsection (3) shall be a joint plan; and
  - (c) the owner and operating authority mentioned in clause (a) shall, jointly with the owner of the system that obtains the treated water and the operating authority for that system, ensure that the plan is prepared and submitted.
- (7) If the drinking water system referred in clause (6) (a) itself obtains treated water from another system, subsection (6) also applies to that other system.
- (8) If the plan mentioned in subsection (3) requires the owner or the operating authority to do anything in connection with implementing measures under the plan or monitoring their effectiveness, the owner shall, at the same time as the plan is submitted to the Director, apply to the Director to amend the system's approval or municipal drinking water licence to reflect the requirements of the plan.
- (9) If the Director has amended the system's approval or municipal drinking water licence under subsection (8) and the owner or operating authority is carrying out the monitoring program described by clause (5) (e), the requirements for taking samples set out in subsection 15.1-4 (1), subsection 15.1-4 (3), subsections 15.1-5 (3) and (4) and subsection 15.1-5 (8) cease to apply to the drinking water system.

#### SCHEDULE 16

#### REPORTING ADVERSE TEST RESULTS AND OTHER PROBLEMS

##### **Application**

**16-1.** This Schedule applies to the following drinking water systems:

1. Large municipal residential systems.
2. Small municipal residential systems.

##### **Duty to report under s. 18 of the Act**

**16-3.** (1) The following are prescribed as adverse results of a drinking water test for the purpose of section 18 of the Act:

1. A result that exceeds any of the standards prescribed by Schedule 1, 2 or 3 to the Ontario Drinking Water Quality Standards, other than the standard for fluoride, if the result is from a sample of drinking water.
2. A result indicating the presence of *Aeromonas* spp., *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Clostridium* spp. or fecal *streptococci* (Group D *streptococci*) in a sample of drinking water.
3. A result indicating the presence of a pesticide not listed in Schedule 2 to the Ontario Drinking Water Quality Standards in a sample of drinking water, at any concentration.
4. If the drinking water system is required to take free chlorine residual tests under clause 7 (2) (a) or to provide secondary disinfection in accordance with section 1-5 of Schedule 1 or section 2-5 of Schedule 2, the system provides chlorination, the system does not provide chloramination and a report under subsection 18 (1) of the Act has not been made in respect of free chlorine residual in the preceding 24 hours, a result indicating that the concentration of free chlorine residual is less than 0.05 milligrams per litre in,

- i. a distribution sample that is a grab sample, or
  - ii. two distribution samples that are tested by continuous monitoring equipment, if the two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample.
5. If the drinking water system is required to take combined chlorine residual tests under clause 7 (2) (b) or to provide secondary disinfection in accordance with section 1-5 of Schedule 1 or section 2-5 of Schedule 2, the system provides chloramination and a report under subsection 18 (1) of the Act has not been made in respect of combined chlorine residual in the preceding 24 hours, a result indicating that the concentration of combined chlorine residual is less than 0.25 milligrams per litre and the concentration of free chlorine residual is less than 0.05 milligrams per litre in,
- i. a distribution sample that is a grab sample, or
  - ii. two distribution samples that are tested by continuous monitoring equipment, if the two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample.
6. If the drinking water system is required to provide filtration and a report under subsection 18 (1) of the Act has not been made in respect of turbidity in the preceding 24 hours, a result indicating that turbidity exceeds 1.0 Nephelometric Turbidity Units (NTU) in,
- i. a grab sample of water taken from a filter effluent line, or
  - ii. two samples of water from a filter effluent line that are tested by continuous monitoring equipment, if,
    - A. two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample, and
    - B. the filter effluent line is directing water to the next stage of the treatment process.
7. If an approval, municipal drinking water licence or order, including an OWRA order, identifies a parameter as a health-related parameter and establishes a maximum concentration for the parameter, a result indicating that the parameter exceeds the maximum concentration in a sample of drinking water.
8. A result indicating that the concentration of sodium exceeds 20 milligrams per litre in a sample of drinking water, if a report under subsection 18 (1) of the Act has not been made in respect of sodium in the preceding 57 months.
9. A result indicating that the concentration of fluoride exceeds 1.5 milligrams per litre in a sample of drinking water, if,
- i. the drinking water system provides fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 24 hours, or
  - ii. the drinking water system does not provide fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 57 months.
- (2) Despite subsection (1), a result is not an adverse test result of a drinking water test for the purpose of section 18 of the Act if,
- (a) the result indicates compliance with a condition in an approval or licence that was imposed under clause 38 (2) (b), 46 (2) (b) or 60 (2) (b) of the Act; and
  - (b) the test was conducted at the drinking water system or the owner or operating authority for the system gave written notice of the condition referred to in clause (a) to the laboratory that conducted the test.

**Duty to report other observations**

**16-4.** If an observation other than an adverse test result prescribed by section 16-3 indicates that a drinking water system that provides or is required to provide disinfection is directing water to users of water from the system that has not been disinfected in accordance with the Ministry's *Procedure for Disinfection of Drinking Water in Ontario*,

- (a) the owner of the system shall report to the Ministry and the medical officer of health immediately after the observation is made; or

- (b) if an operating authority is responsible for the operation of the system, the operating authority shall report to the Ministry, the medical officer of health and the owner of the system immediately after the observation is made.

#### **Manner of making immediate report**

**16-6.** (1) A person who is required to report immediately under section 16-4 or 16-5 or under section 18 of the Act shall do so in accordance with this section and section 16-8.

(2) An immediate report required under section 16-4 or 16-5 or under subsection 18 (1) of the Act must be given by speaking in person or by telephone with a person referred to in subsection (3).

(3) For the purpose of subsection (2), the immediate report must be given,

- (a) to a medical officer of health, by speaking with a person at the office of the medical officer of health or, if the office is closed, by speaking with a person at the on-call system of the health unit;
- (b) to the Ministry, by speaking with a person at the Ministry's Spills Action Centre; and
- (c) if the report is required under section 16-5, by speaking with a responsible individual at the designated facility.

(4) An immediate report required under subsection 18 (3) of the Act must be given by speaking in person or by telephone with a person designated for that purpose by the owner of the drinking water system.

(5) An immediate notice required under subsection 18 (4) of the Act must be given by speaking in person or by telephone with a person designated for that purpose by,

- (a) the owner of the system and the operating authority for the system, if an operating authority is responsible for the system; or
- (b) the owner of the system, if no operating authority is responsible for the system.

#### **Written notice**

**16-7.** (1) A person who is required to report immediately to another person under section 16-4 or 16-5 or under subsection 18 (1) of the Act shall also give the other person a written notice in accordance with this section and section 16-8.

(2) A written notice required by subsection (1) must be given within 24 hours after the immediate report is given under section 16-4 or 16-5 or under subsection 18 (1) of the Act.

(3) A written notice required by subsection (1) must be given to,

- (a) the medical officer of health, by delivering the written notice to the office of the medical officer of health;
- (b) the Ministry, by delivering the written notice to the Ministry's Spills Action Centre; and

#### **Content of report and notice**

**16-8.** (1) An immediate report given under section 16-4 or 16-5 or under section 18 of the Act must specify the adverse test result or observation that requires the report.

(1.1) Subsection (1) does not apply to an immediate report given by the owner of a drinking water system if the report relates to an adverse test result from a test that that was not conducted at the system.

(1.2) If the person operating a laboratory gives an immediate report under section 18 of the Act in respect of a result that exceeds any of the standards prescribed by Schedule 1 to the Ontario Drinking Water Quality Standards for a water sample that was required, by this Regulation or an approval, municipal drinking water licence or order, including an OWRA approval or OWRA order, to be tested for a microbiological parameter, and the laboratory received notice of the test result for the other sample that, under section 6-3 of Schedule 6, was required to be taken and tested for free chlorine residual or combined chlorine residual, the immediate report must also specify that test result.

(2) An immediate report given under section 16-4 or 16-5 or under subsection 18 (1) of the Act must indicate,

- (a) what actions are being taken in response to the adverse test result or observation that requires the report; and
  - (b) if Schedule 17 or 18 requires that a corrective action be taken in respect of the adverse test result or observation, whether the corrective action is being taken.
- (3) Subsection (2) does not apply to a report given under paragraph 2 of subsection 18 (1) of the Act by a person operating a laboratory.
- (4) Subject to subsection (3), subsections (1) to (2) also apply, with necessary modifications, to the written notice given under section 16-7.

**Notice of issue resolution**

**16-9.** (1) If an immediate report or a written notice is given under this Schedule and the issue that gave rise to the notice is resolved, the owner of the drinking water system shall, within seven days after the issue is resolved, give a written notice summarizing the action taken and the results achieved to,

- (a) the medical officer of health, by delivering the written notice to the office of the medical officer of health; and
- (b) the Ministry, by delivering the written notice to the Ministry's Spills Action Centre.

(2) If an immediate report or a written notice is given under this Schedule to the interested authority for a designated facility and the issue that gave rise to the notice is resolved, the owner of the drinking water system shall, within 30 days after the issue is resolved, give a written notice summarizing the action taken and the results achieved to the interested authority.

**Operating authorities**

**16-10.** An operating authority that has agreed with the owner of a drinking water system to give reports or notices on behalf of the owner under section 18 of the Act or this Schedule shall comply with the agreement.

SCHEDULE 17  
CORRECTIVE ACTION

Large Municipal Residential

**Application**

**17-1.** This Schedule applies to large municipal residential systems.

**Chlorine residual**

**17-4.** If a report is required to be made under section 18 of the Act in respect of free chlorine residual or combined chlorine residual, the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Immediately flush the watermains and restore secondary disinfection to ensure that,
  - i. a free chlorine residual of at least 0.05 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chlorination and does not provide chloramination, or
  - ii. a combined chlorine residual of at least 0.25 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chloramination.
2. Take such other steps as are directed by the medical officer of health.

***Escherichia coli* (E. coli)**

**17-5.** If a report is required to be made under section 18 of the Act in respect of *Escherichia coli* (E. coli), the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Immediately resample and test.
2. Immediately increase the chlorine or chloramine dose and flush the watermains to ensure that,

- i. a free chlorine residual of at least 0.2 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chlorination and does not provide chloramination, or
  - ii. a combined chlorine residual of at least 1.0 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chloramination.
3. Maintain the free chlorine residual or combined chlorine residual concentration referred to in paragraph 2 in the affected parts of the distribution system, and continue to resample and test, until *Escherichia coli* (E. coli) is not detected in any of the samples from two consecutive sets of samples taken 24 to 48 hours apart or as otherwise directed by the medical officer of health.
  4. Take such other steps as are directed by the medical officer of health.

**Total coliforms**

**17-6.** If a report is required to be made under section 18 of the Act in respect of total coliforms, the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Resample and test as soon as reasonably possible.
2. If total coliforms are detected under paragraph 1, immediately increase the chlorine or chloramine dose and flush the watermains to ensure that,
  - i. a free chlorine residual of at least 0.2 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chlorination and does not provide chloramination, or
  - ii. a combined chlorine residual of at least 1.0 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chloramination.
3. Maintain the free chlorine residual or combined chlorine residual concentration referred to in paragraph 2 in the affected parts of the distribution system, and continue to resample and test, until total coliforms are not detected in any of the samples from two consecutive sets of samples taken 24 to 48 hours apart or as otherwise directed by the medical officer of health.
4. Take such other steps as are directed by the medical officer of health.

**Chemical and radiological parameters in O. Reg. 169/03**

**17-10.** If a report is required to be made under section 18 of the Act in respect of a chemical or radiological parameter set out in Schedule 2 or 3 to the Ontario Drinking Water Quality Standards, the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Resample and test as soon as reasonably possible.
2. If a concentration that exceeds the standard prescribed for the parameter by Schedule 2 or 3 to the Ontario Drinking Water Quality Standards is detected under paragraph 1, take such other steps as are directed by the medical officer of health.

**Corrective action that requires report under s. 18 of the Act**

**17-14.** If a report is required to be made under section 18 of the Act as a result of a drinking water test that is a component of corrective action taken with respect to a parameter in accordance with this Schedule, it is not necessary to start the corrective action with respect to that parameter over again, but the owner of the drinking water system and the operating authority for the system shall ensure that any remaining components of the corrective action are completed.

O. Reg. 170/03, Sched. 17; O. Reg. 165/04, s. 6; O. Reg. 247/06, s. 28; O. Reg. 418/09, s. 24.

**SCHEDULE 18**  
**CORRECTIVE ACTION**

**Municipal: Small Residential**

**Application**

**18-1.** This Schedule applies to the following drinking water systems:

1. Small municipal residential systems.

**Chlorine residual**

**18-4.** If a report is required to be made under section 18 of the Act in respect of free chlorine residual, the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Immediately flush the distribution system and any plumbing owned by the owner of the drinking water system, and restore secondary disinfection to ensure that,
  - i. a free chlorine residual of at least 0.05 milligrams per litre is quickly achieved at all points in the affected parts of the distribution system and plumbing, if the drinking water system provides chlorination and does not provide chloramination, or
  - ii. a combined chlorine residual of at least 0.25 milligrams per litre is quickly achieved at all points in the affected parts of the distribution system and plumbing, if the drinking water system provides chloramination.
2. If the drinking water system provides chlorination, the system does not provide chloramination and a free chlorine residual of at least 0.05 milligrams per litre cannot be quickly achieved at all points in the affected parts of the distribution system and plumbing, immediately take all reasonable steps to notify all users of water from the system to use an alternate source of drinking water or, if no alternate source is available, to bring water to a rapid rolling boil for at least one minute before use.
- 2.1 If the drinking water system provides chloramination and a combined chlorine residual of at least 0.25 milligrams per litre cannot be quickly achieved at all points in the affected parts of the distribution system and plumbing, immediately take all reasonable steps to notify all users of water from the system to use an alternate source of drinking water or, if no alternate source is available, to bring water to a rapid rolling boil for at least one minute before use.
3. Take such other steps as are directed by the medical officer of health.

***Escherichia coli* (E. coli)**

**18-5.** If a report is required to be made under section 18 of the Act in respect of *Escherichia coli* (E. coli), the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Immediately take all reasonable steps to notify all users of water from the system to use an alternate source of drinking water or, if no alternate source is available, to bring water to a rapid rolling boil for at least one minute before use.
2. Immediately resample and test.
3. Immediately increase the chlorine dose and flush the distribution system and any plumbing owned by the owner of the drinking water system to ensure that,
  - i. a free chlorine residual of at least 0.2 milligrams per litre is achieved at all points in the affected parts of the distribution system and plumbing, if the drinking water system provides chlorination and does not provide chloramination, or
  - ii. a combined chlorine residual of at least 1.0 milligrams per litre is achieved at all points in the affected parts of the distribution system and plumbing, if the drinking water system provides chloramination.
4. If the drinking water system provides chlorination or chloramination, maintain the free chlorine residual or combined chlorine concentration referred to in paragraph 3 in the affected parts of the



distribution system and plumbing, and continue to resample and test, until *Escherichia coli* (E. coli) is not detected in any of the samples from two consecutive sets of samples taken 24 to 48 hours apart or as otherwise directed by the medical officer of health.

5. If the drinking water system does not provide chlorination or chloramination, immediately take the relevant corrective action steps described in the Ministry's *Procedure for Corrective Action for Systems Not Currently Using Chlorine*.
6. Take such other steps as are directed by the medical officer of health.

**Total coliforms**

**18-6.** If a report is required to be made under section 18 of the Act in respect of total coliforms, the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Resample and test as soon as reasonably possible.
2. If total coliforms are detected under paragraph 1, immediately increase the chlorine dose and flush the distribution system and any plumbing owned by the owner of the drinking water system to ensure that,
  - i. a free chlorine residual of at least 0.2 milligrams per litre is achieved at all points in the affected parts of the distribution system and plumbing, if the drinking water system provides chlorination and does not provide chloramination, or
  - ii. a combined chlorine residual of at least 1.0 milligrams per litre is achieved at all points in the affected parts of the distribution system and plumbing, if the drinking water system provides chloramination.
3. If total coliforms are detected under paragraph 1 and the drinking water system provides chlorination or chloramination, maintain the free chlorine residual or combined chlorine concentration referred to in paragraph 2 in the affected parts of the distribution system and plumbing, and continue to resample and test, until total coliforms are not detected in any of the samples from two consecutive sets of samples taken 24 to 48 hours apart or as otherwise directed by the medical officer of health.
5. Take such other steps as are directed by the medical officer of health.

***Aeromonas* spp., etc.**

**Chemical and radiological parameters in O. Reg. 169/03**

**18-10.** If a report is required to be made under section 18 of the Act in respect of a chemical or radiological parameter set out in Schedule 2 or 3 to the Ontario Drinking Water Quality Standards, the owner of the drinking water system and the operating authority for the system shall ensure that the following corrective action is taken:

1. Resample and test as soon as reasonably possible.
2. If a concentration that exceeds the standard prescribed for the parameter by Schedule 2 or 3 to the Ontario Drinking Water Quality Standards is detected under paragraph 1, take such other steps as are directed by the medical officer of health.

**Corrective action that requires report under s. 18 of the Act**

**18-14.** If a report is required to be made under section 18 of the Act as a result of a drinking water test that is a component of corrective action taken with respect to a parameter in accordance with this Schedule, it is not necessary to start the corrective action with respect to that parameter over again, but the owner of the drinking water system and the operating authority for the system shall ensure that any remaining components of the corrective action are completed.

SCHEDULE 19  
WARNING NOTICE OF POTENTIAL PROBLEMS

Municipal: Small Residential

**Application**

**19-1.** This Schedule applies to the following drinking water systems:

1. Small municipal residential systems.

**Warning notice to be posted**

**19-2.** (1) The owner of a drinking water system and the operating authority for the system shall ensure that warning notices are posted in accordance with this section if,

- (a) the owner or operating authority is required under Schedule 18 to take all reasonable steps to ensure that all users of water from the system are notified to use an alternate source of drinking water or, if no alternate source is available, to bring water to a rapid rolling boil for at least one minute before use; or
- (b) the owner or operating authority is not complying with Schedule 11, 12 or 18.

(2) The warning notices required by subsection (1) must be posted in prominent locations where they are likely to come to the attention of users of water from the system.

**Posting by others**

**19-3.** (1) If warning notices are not posted in accordance with section 19-2, the warning notices may be posted by,

- (a) a provincial officer; or
- (b) a public health inspector under the *Health Protection and Promotion Act*, or a person acting under the supervision of a public health inspector.

SCHEDULE 22  
SUMMARY REPORTS FOR MUNICIPALITIES

Municipal: Large Residential  
Small Residential

**Application**

**22-1.** This Schedule applies to the following drinking water systems:

1. Large municipal residential systems.
2. Small municipal residential systems.

**Report**

**22-2.** (1) The owner of a drinking water system shall ensure that, not later than March 31 of each year after 2003, a report is prepared in accordance with subsections (2) and (3) for the preceding calendar year and is given to,

- (a) in the case of a drinking water system owned by a municipality, the members of the municipal council;
- (b) in the case of a drinking water system owned by a municipal service board established under section 195 of the *Municipal Act, 2001*, the members of the municipal service board; or
- (c) in the case of a drinking water system owned by a corporation, the board of directors of the corporation.

(2) The report must,

- (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and

- (b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.
- (3) The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:
1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
  2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.
- (4) If a report is prepared under subsection (1) for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

**OWRA approvals**

**22-3.** A provision of an OWRA approval that requires the completion and presentation of a compliance report does not apply to a drinking water system if the owner of the system complies with section 22-2.